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AUTHOR Hathway, James A., Ed.
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ABSTRACT

This is one form of three performance checks booklets (A, B, and C) for two texts of Level III of the Intermediate Science Curriculum Study (ISCS). These two texts are Environmental Science (ES), and Well-Being (WB). The 12 performance checks booklets for Level III are considered one of four major subdivisions of a set of individualized evaluation materials for Level III of the ISCS. This booklet (form A), developed to assess the students' achievement of the objectives of the ES and WB of Level III, contains a set of performance checks equivalent to the performance checks of the two forms (B and C). Each performance check has its own code number indicating the unit number and identifying whether it is based on core material or excursions. Directions for students' use of performance checks are also included. (HM)

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INTERMEDIATE SCIENCE CURRICULUM STUDY

ISCS

ED178280

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INDIVIDUALIZED TESTING SYSTEM

Performance Checks

ISCS LEVEL III
ES-WB
FORM A

SE 028 473

SILVER BURDETT
GENERAL LEARNING CORPORATION
Morristown, New Jersey · Park Ridge, Ill. · Palo Alto · Dallas · Atlanta

INDIVIDUALIZED TESTING SYSTEM

ALL LEVELS
Individualizing Objective Testing (an ITP module)
Evaluating and Reporting Progress (an ITP module)

LEVEL I
Performance Objectives, ISCS Level I
Performance Checks, ISCS Level I, Forms A, B, and C
Performance Assessment Resources, ISCS Level I, Parts 1 and 2

LEVEL II
Performance Objectives, ISCS Level II
Performance Checks, ISCS Level II, Forms A, B, and C
Performance Assessment Resources, ISCS Level II, Parts 1 and 2

LEVEL III
Performance Objectives, ISCS Level III
Performance Checks, ISCS Level III, ES-WB, Forms A, B, and C
WYY-IV, Forms A, B, and C
IO-WU, Forms A, B, and C
WW-CP, Forms A, B, and C
Performance Assessment Resources, ISCS Level III, ES-WB
WYY-IV
IO-WU
WW-CP

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MATERIALS DEVELOPMENT CONTRIBUTORS

Betsy Conlon Balzano, State University of New York at Brockport
Allan D. Dawson, F.S.U.
Linda Dubaldi, F.S.U.
Gregory Eckles, Hatboro, Pa.
William H. Fletcher, F.S.U.
John Hassard, Georgia State University
John Hockett, Governors State University
Linda MacGregor, Warminster, Pa.
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Gerald G. Neufeld, F.S.U.
Lawrence E. Oliver, F.S.U.
Barney Parker, F.S.U.
John Selgrath, Warminster, Pa.
Everett S. Stallings, F.S.U.

FOREWORD

To implement an educational approach successfully, one must match the philosophy of evaluation with that of instruction. This is particularly true when individualization is the key element in the educational approach. Yet, as important as it is to achieve this match, the task is by no means simple for the teacher. In fact, without specific resource materials to help him, he is apt to find the task overwhelming. For this reason, ISCS has developed a set of individualized evaluation materials as part of its Individualized Teacher Preparation (ITP) program. These materials are designed to assist teachers in their transition to individualized instruction and to help them tailor their assessment of students' progress to the needs of all their students.

The two modules concerned with evaluation, *Individualizing Objective Testing* and *Evaluating and Reporting Progress*, can be used by small groups of teachers in in-service settings or by individual teachers in a local school environment. Hopefully, they will do more than give each teacher an overview of individualized evaluation. These ITP modules suggest key strategies for achieving both subjective and objective evaluation of each student's progress. And to make it easier for teachers to put such strategies into practice, ISCS has produced the associated booklets entitled *Performance Objectives, Performance Assessment Resources*, and *Performance Checks*. Using these materials, the teacher can objectively assess the student's mastery of the processes, skills, and subject matter of the ISCS program. And the teacher can obtain, at the moment when they are needed, specific suggestions for remedying the student's identified deficiencies.

If you are an ISCS teacher, selective use of these materials will guide you in developing an individualized evaluation program best suited to your own settings and thus further enhance the individualized character of your ISCS program.

The Co-Directors
Intermediate Science Curriculum Study
Rm 415, W.H. Johnston Building
415 North Monroe Street
Tallahassee, Florida 32301

NOTES TO THE STUDENT

Now that you have completed several chapters, excursions, and self-evaluations, you are ready to help your teacher determine how well you are doing. The performance checks in this book will provide your teacher with this information. Then your teacher can help you with things you may not understand and can keep a record of your progress.

Read the next section carefully. It explains some important things about the performance checks in this book, and it gives you specific suggestions for using them.

What You Need To Know about Performance Checks

1. **You do performance checks when you are ready.** Performance checks are somewhat like the questions in the self-evaluations – you do them when you are ready, not when the whole class is ready.
2. **Your teacher or both of you decide how many you do.** Your teacher or you and your teacher together will decide which ones you should do. You are not expected to do all of the performance checks.

3. **There are three forms for each performance check.** Every performance check is written in three forms – A, B, and C. (The title of this booklet tells you whether it is Form A, B, or C.) Usually the answers for each form are different. When you do a check, you will use only one form. The A, B, and C forms are always in different booklets. Within each booklet all the performance objectives for the same unit are listed together. A unit contains two or three chapters and their related excursions. These units are in numerical order. Each unit has performance checks based on core material and performance checks based on excursions.
4. **Each performance check has its own number.** The number is in the outside margin of the page and will look like this: ES-03-Core-17A or WB-01-Exc 2-2-2A. These numbers mean

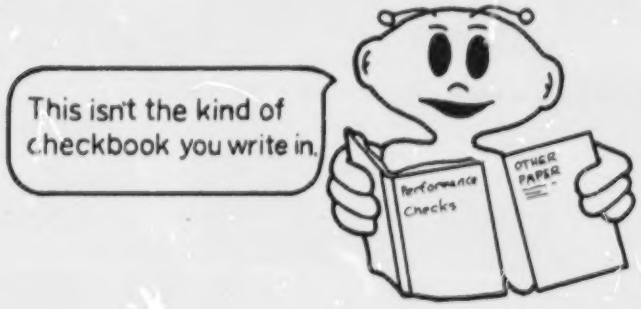
ES	- 03	- Core	- 17	A	and	WB	- 01	- Exc	2-2	- 2	A
text	unit	based on core material	check number	form of the check		text	unit	based on excursion material	excursion number	check number	form of the check

5. **Each performance check is separated from the other.** There is a line before each performance check and one after it. Some performance checks have several parts, so do everything called for between the lines. If there is no line at the bottom of a page, the check is continued onto the next page.

6. **Sometimes you will need to use equipment.** If special materials are needed, they will be in boxes labeled with the same number and sometimes the same letter too as the performance check for which you need them.

7. **Some performance checks have two or more answers.** If more than one answer is correct, you must select all the correct choices. In such cases, selecting just one answer is not enough.

8. **Some performance checks have no answers.** Occasionally, you may be asked to do something that is impossible and to explain your answer. If so, say that the task is impossible and explain why.



9. **You share books of performance checks and YOU DO NOT WRITE IN THEM.** Write your answers on other paper. Give the number and form of the performance check for each answer you write. If you are to draw a graph, a chart, or a map, your teacher may provide you with grid paper or a copy of the map or chart.

10. **Your teacher or his assistant will collect and mark your checks.** And sometimes you must ask him to watch or assist you as you do a check.

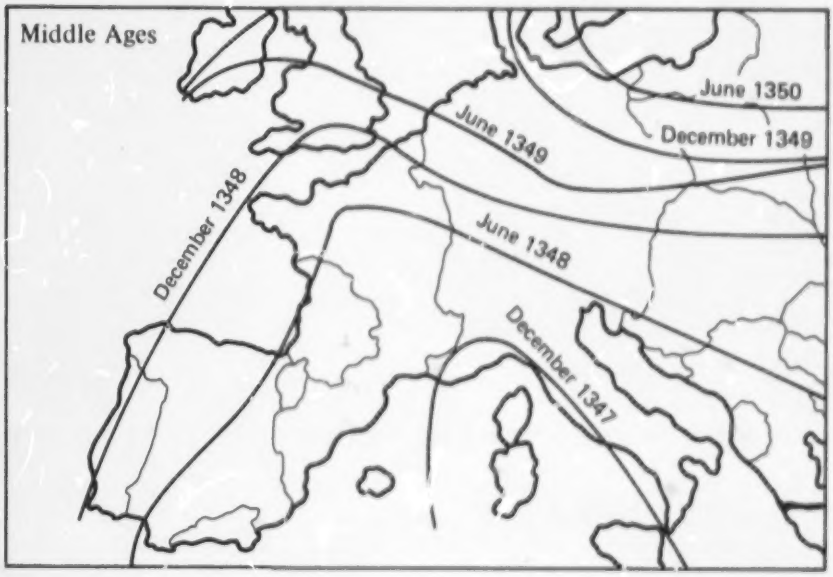
11. **Sometimes a review procedure will be suggested.** If you can't do a performance check, you may be asked to review a part of the text or a self-evaluation question. You may then be checked on the same material, so be sure you understand the material you review. Get help if you need it.

Environmental Science **ES**

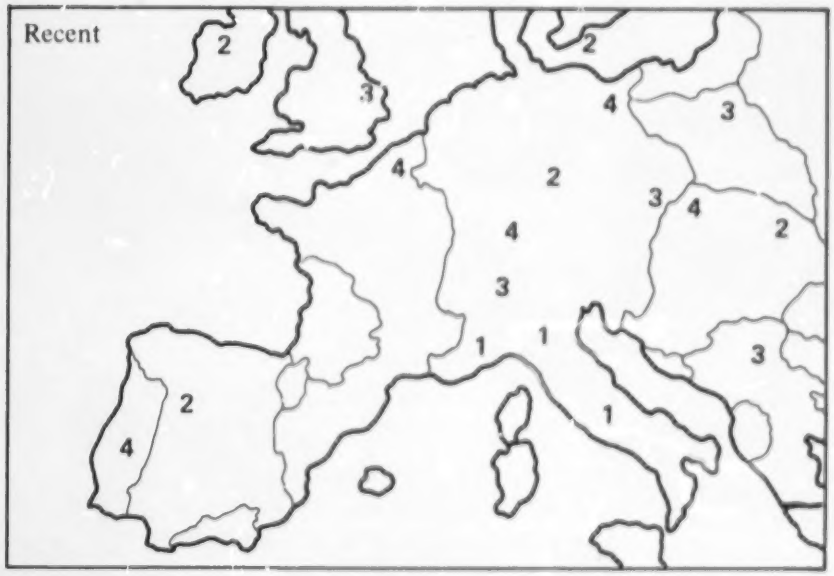
Look at the maps below. During the Middle Ages, diseases seemed to break out in one place and then spread slowly and regularly from city to city. Now diseases such as flu epidemics seem to break out quickly in many different cities in irregular patterns. Explain why diseases seem to spread much more rapidly and irregularly now than in the Middle Ages.

ES
01-Core-1A

Epidemics in Europe



(Dated lines represent time of outbreak)



KEY

SYMBOL	OUTBREAK REPORTED
1	1st week
2	2nd week
3	3rd week
4	4th week

ES 01-Core-2A

Get a copy of the map labeled ES-01-Core-2 from your teacher. Suppose that outbreaks of smallpox were recorded as shown below.

MONTH AND YEAR	NEW CITIES AFFECTED
January, 1840	Lisbon, Madrid, Bordeaux, Angers, Bristol, and Dublin
July, 1840	Marseilles, Geneva, Calais, Norwich, and Glascow
January, 1841	Stockholm, Rostock, Berlin, Munich, Trieste, and Naples

Show the spread of the epidemic by drawing a line of best fit for each one of the dates given in the table above.

ES 01-Core-3A

1. Is a disease that spreads from one person to another likely to spread more rapidly in a large city or in a rural area?
2. Explain your answer.

ES 01-Core-4A

1. Could an epidemic of a disease like the Black Death possibly occur today?
2. Explain your answer.

ES 01-Core-5A

List two or more conditions that would favor the spread of an epidemic across an entire city.

ES 01-Core-6A

A doctor has been hired to help the government of a heavily populated country. His job is to advise the government as to the fastest and most effective way to reduce the number of epidemics of serious diseases that sweep the country from time to time. The government can afford only one of the programs listed below.

a. Building new medical schools to train more doctors
b. Developing an improved transportation system so that doctors can travel more quickly
c. Building many low-cost government housing projects to eliminate overcrowded and unsanitary living conditions
d. Building new hospitals so that more sick people can receive treatment

1. Which one of the programs above do you think the doctor should recommend?
2. Explain your answer.

ES 01-Core-7A

In a discussion of a system, what is meant by the term *component*?

ES 01-Core-8A

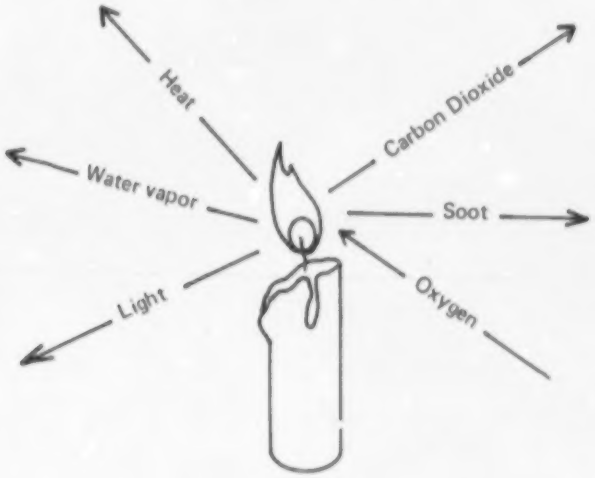
Consider a bicycle as a system. List three components of this system.

Explain briefly what *system* means as the word is used in the following sentence. Automobiles, the human body, and an assembly line are examples of systems.

ES
01-Core-9A

The diagram below shows a candle-air system. List any three of the labels which identify components of this system.

ES
01-Core-10A



Candle-Air System

All living things release output into their surroundings. If living things are constantly releasing output, explain why we do not often find the output piling up.

ES
01-Core-11A

An automobile engine can be thought of as one component of a system. The list below includes some things which are input and output of this component.

ES
01-Core-12A

a. Light
b. Gasoline
c. Exhaust gases
d. Air
e. Time
f. Heat

1. Write the letters of two things which are input to an automobile engine.
2. Write the letters of two things which are output from an automobile engine.

What is meant by the term *producer* as it is used in the following sentence? An oak tree is a producer.

ES
01-Core-13A

ES
01-Core-14A

Organisms such as deer and wolves are called *consumers.* What is the meaning of the word *consumer* when it is used in this way?

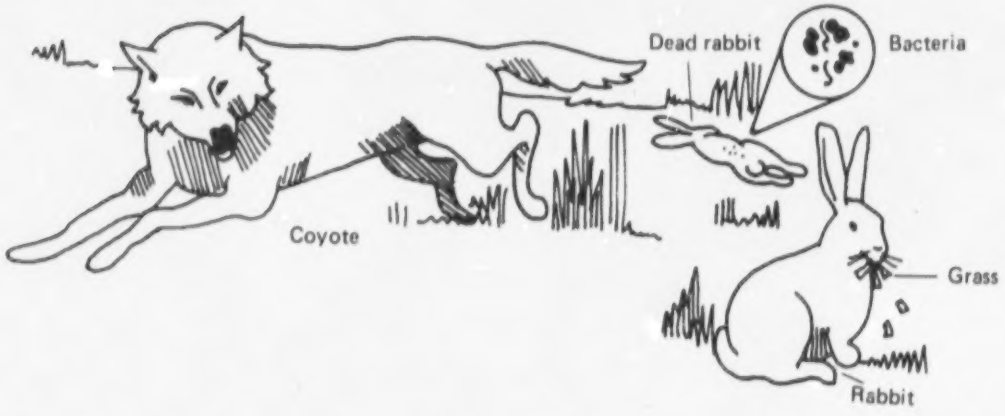
ES
01-Core-15A

Some types of living things are known as *decomposers.* State what is meant by the term *decomposer.*

ES
01-Core-16A

Consider the environmental system pictured below. Identify each component in the following list as a producer, a consumer, or a decomposer.

1. Grass growing in a field
2. Bacteria, which feed on dead rabbits
3. Rabbits eating grass in the field
4. Coyotes, which roam the fields hunting for rabbits



Sometimes a person will throw a piece of paper out of a car window. A single sheet of paper does not affect the environment very much. However, the governments of all states have passed laws making it illegal to throw trash onto the side of the road. Why do governments pass laws that make a little thing like this illegal?

ES
01-Core-17A

Mr. Morgan is requesting permission to build a new factory in town. The plans call for a good waste-treatment process so that liquid wastes will not pollute nearby streams and for an air-cleaning process so there will be no smoke to pollute the air. In fact, Mr. Morgan made a statement to the press saying that the factory will be so well designed that it will not influence its surroundings at all.

1. Can Mr. Morgan's statement to the press be true?
2. Explain your answer.

ES
01-Core-18A

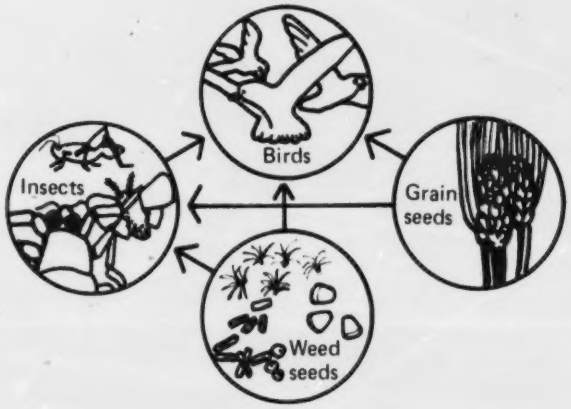
In the four cases below, decide whether the influence on the underlined living organisms is direct or indirect. After the number of each case, write either the word *direct* or the word *indirect*.

1. A city reduces the number of purple martins, which eat insects, by draining swamps to kill the mosquitoes and other insects.
2. A tree dies because a vine grows over it and blocks out the sunlight.
3. Trees die from lack of water because the area around them has been covered by concrete.
4. A farmer reduces the number of foxes on his farm by shooting them.

ES
01-Core-19A

The diagram below shows the food flow through a balanced system on a farm. Predict what might happen if the farmer sprayed with insecticides and destroyed almost all the insects.

ES
01-Core-20A



A marshy area drains into the Everglades National Park. Plans are being made to fill in some of the marshy area and construct a large new airport. Give at least two ways in which the environment probably will be affected by pollution from the airport.

ES
01-Core-21A

ES
01-Core-22A

Some scientists have told Congress that the average person in the United States has the same effect on the environment as 30 persons living in one of the nonindustrial nations of the world. Explain how this could be true.

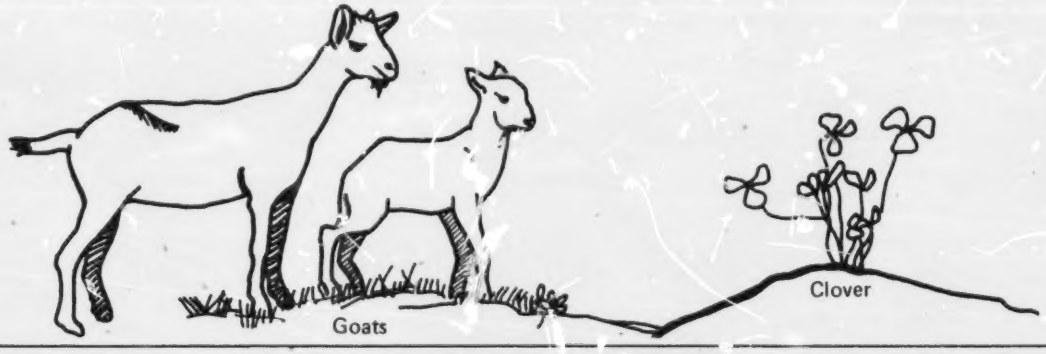
ES
01-Core-23A

Select the best answer for the following question. Which of the following will affect the environment?

a. A secretary driving her car to work
b. A person pedaling his bicycle to the office
c. A tree growing in the forest
d. Plants in an aquarium kept by a tropical fish hobbiest in his living room
e. All of the above

ES
01-Core-24A

Describe the input and output of gases of the system formed by living things and the atmosphere that surrounds them in the following situation. Clover grows in a field in which a herd of goats graze.



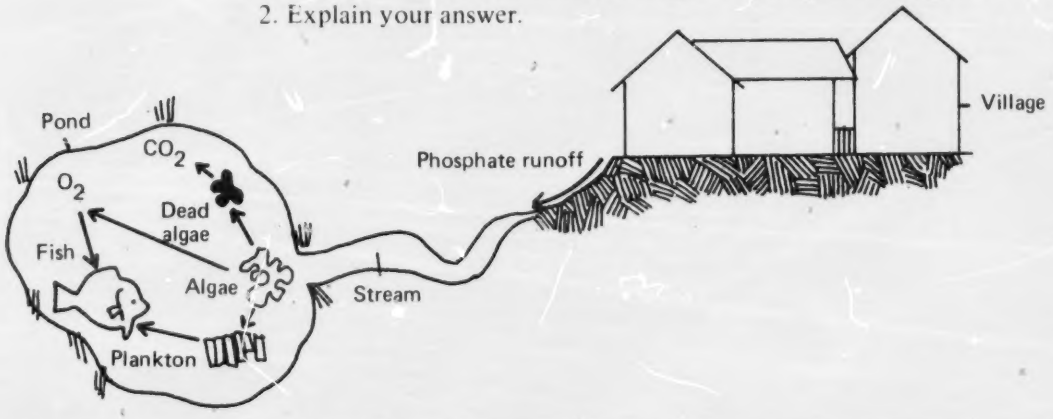
ES
01-Core-25A

List two things which are input to and three things which are output from the human body.

ES
01-Core-26A

The system pictured below is in balance.

1. What is likely to happen to the fish in the pond when the housewives in the village on the hill switch from soap to a phosphate detergent?
2. Explain your answer.



Your teacher will observe you for this check when he can. ES 01-Core-27A

Your teacher will observe you for this check when he can. ES 01-Core-28A

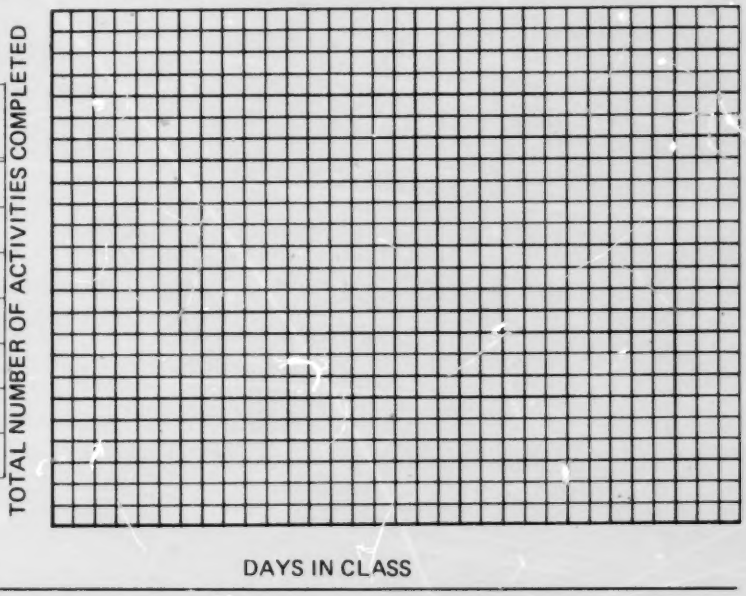
Your teacher will observe you for this check when he can. ES 01-Core-29A

Your teacher will observe you for this check when he can. ES 01-Core-30A

Your teacher will observe you for this check when he can. ES 01-Core-31A

The following table lists the total number of ISCS activities completed by a student during the first thirty days of classes. Get a partially labeled grid or an unlabeled grid from your teacher. If the grid is unlabeled, draw and label the axes as shown on the grid below. Put a suitable scale on each axis. Then plot the data, and draw the line of best fit. ES 01-Exc 1-1-1A

DAYS IN CLASS	TOTAL NUMBER OF ACTIVITIES COMPLETED
0	0
5	9
10	14
15	18
20	22
25	24
30	27

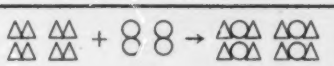


1. Is it possible for the following reaction to occur? ES 01-Exc 2-1-1A

$Pb(NO_3)_2$ + $2KI$ → $PbCl_2$ + $2NaNO_3$
(lead nitrate) (potassium iodide) (lead chloride) (sodium nitrate)

2. Explain your answer.

ES
01-Exc 2-1-2A



In the equation pictured above, assume that the symbols Δ and ○ represent different kinds of atoms. After the number of each term below, draw on your answer sheet the symbol or symbols taken from the equation above which illustrate the term.

1. Element
2. Reactant
3. Product
4. Compound

ES
01-Exc 2-1-3A

Beverly is producing some carbon dioxide gas. The chemical reaction that she is using to produce the gas is

$CaCO_3$	+	$2HCl$	→	$CaCl_2$	+	H_2O	+	CO_2
(calcium carbonate)		(hydrochloric acid)		(calcium chloride)		(water)		(carbon dioxide)

Which of the following actions would not increase the rate at which carbon dioxide is produced?

a. Increasing the concentration of HCl
b. Heating the substances that are reacting
c. Decreasing the concentration of $CaCO_3$
d. Adding a catalyst

ES
01-Exc 2-1-4A

Paper reacts with the oxygen in the air in a process that is usually called *burning*. However before the burning starts, the paper must be heated. Explain why this heat energy is needed to start the burning process.

ES
01-Exc 2-1-5A

Match the letter of each definition below with the number of the term from the ISCS particle model to which it applies.

Terms	Definitions
1. Element	a. A starting substance in a chemical reaction
2. Compound	b. A substance containing only one kind of atom
3. Product	c. A new substance produced in a chemical reaction
4. Reactant	d. A particle with either excess positive charge or excess negative charge
5. Ion	e. A substance containing two or more different kinds of atoms
6. Molecule	f. A particle that contains equal numbers of positive and negative charges

---

Ernest measured the temperature of two solutions, A and B. He then mixed the two solutions and measured the temperature again.

ES
01-Exc 2-1-6A

SOLUTION	TEMPERATURE (in °C)
A	18
B	19
A + B	24

Select the statement below that best describes the relationship between the energy needed to separate the reactant particles and the energy released when those particles recombine to form products in the chemical reaction.

a. The heat needed to separate the reactant particles is greater than the heat released when those particles recombine to form products.
b. The heat needed to separate the reactant particles is less than the heat released when those particles recombine to form products.
c. The heat needed to separate the reactant particles is equal to the heat released when those particles recombine to form products.
d. From the information given, you cannot tell which energy is greater.

Men in a gun club have spoken with a legislator about wolves. The men claim the wolves are killing off the deer population in the area and reducing their hunting. They want a bounty on wolves to encourage people to shoot them. Their argument is that the wolves don't do anyone any good and that killing them would provide better deer hunting. What information should the legislator try to get to help him make a decision?

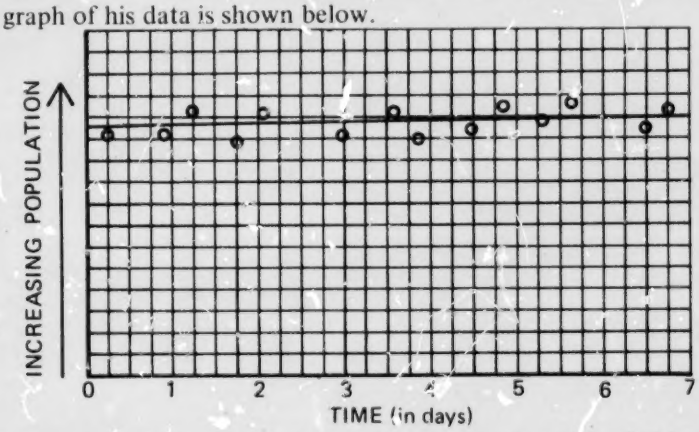
ES
01-Exc 2-2-1A

What is meant by the term *biochemical oxygen demand*?

ES
02-Core-1A

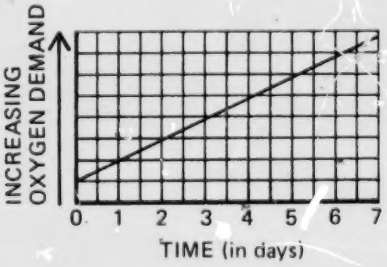
Victor measured the number of microorganisms in an aquarium twice each day for a week. A graph of his data is shown below.

ES
02-Core-2A

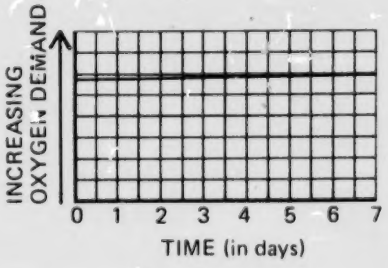


Which of the graphs below best shows the oxygen demand of this population of microorganisms?

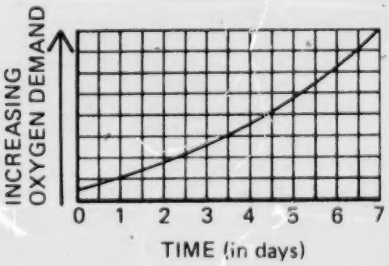
Graph a.



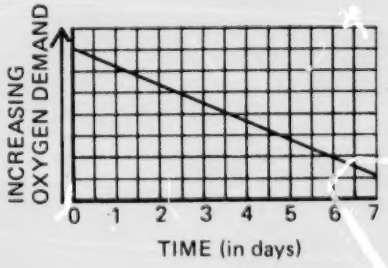
Graph b.



Graph c.



Graph d.



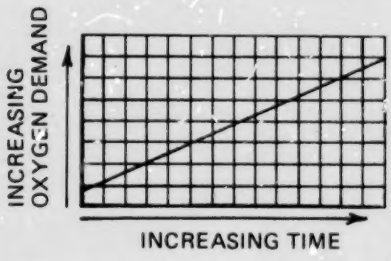
ES
02-Core-3A

Joe and Bill measured the time it took for the blue color to disappear from test tubes containing yeast and milk. Joe claimed that it was the action of the yeast on the milk that caused the color change. Bill said it had nothing to do with the yeast, that the milk itself had caused the color change. Describe an activity you could do to determine which boy is correct.

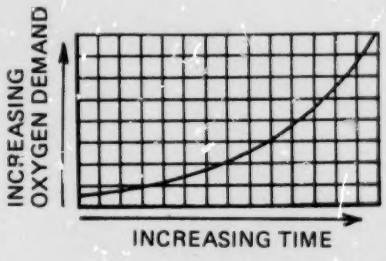
ES
02-Core-4A

Select the graph that best shows how the oxygen demand of a population of microorganisms changes with an unlimited food supply.

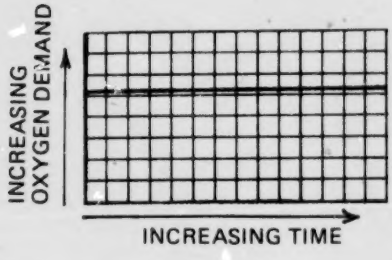
Graph a.



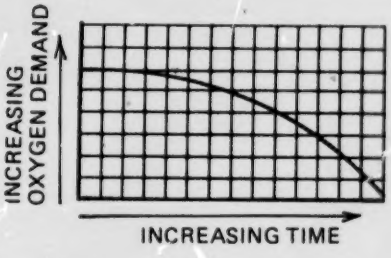
Graph b.



Graph c.



Graph d.



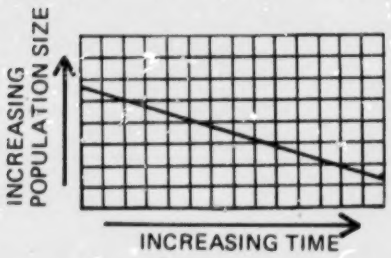
Martha put 10 yeast organisms into a large glass of warm milk. Under those conditions, it takes 30 minutes for each yeast organism to divide in two and become two yeast organisms. Predict the number of yeast organisms that will be in her glass 3 hours later.

ES
02-Core-5A

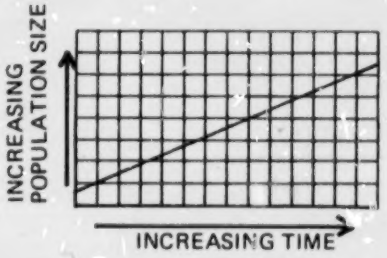
Milo has put a few microorganisms into a gallon of milk. There is enough milk and oxygen available to support a very large population of the microorganisms. Select the graph below that best shows how the size of the microorganism population will change over the next few hours.

ES
02-Core-6A

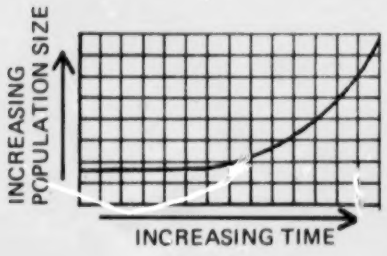
Graph a.



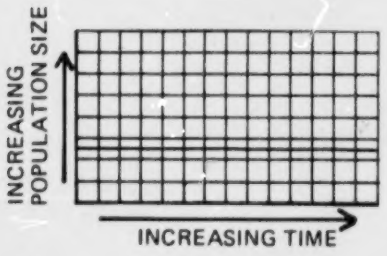
Graph b.



Graph c.



Graph d.



ES
02-Core-7A

Crystal Lake is surrounded by cottages each of which has a sewerage line which extends into the lake. One summer, the residents noticed that certain kinds of fish no longer lived in Crystal Lake. The most probable reason is that

a. the sewage poisoned the fish.
b. the water stinks too much.
c. the fish became diseased from the sewage.
d. the water contains too little oxygen.

ES
02-Core-8A

What is a cause of the oxygen death of a lake or stream?

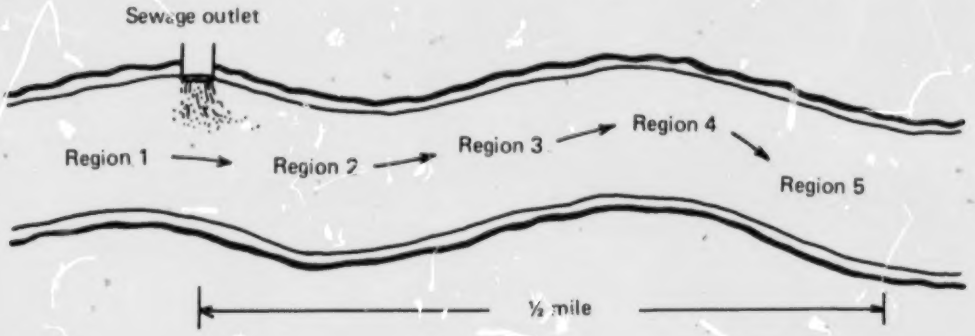
ES
02-Core-9A

Sewage has been flowing into Dead Lake. It is now filled with many decomposers. A civic group says that the decomposers have caused the lake to die. The group wants to spray the lake to get rid of all the decomposers.

1. Is this a good solution to the problem?
2. If so, explain why it is good. If not, suggest a better solution and explain why it is better.

ES
02-Core-10A

Monica did a survey of the number of fish living in various parts of a slow-moving stream near her house. She drew the diagram and table shown below.



REGION OF STREAM	NUMBER OF FISH
1	many fish
2	many fish
3	some fish
4	few fish
5	no fish

Use what you have learned about the needs of fish and the decomposition of sewage to explain Monica's observations.

Many cities and towns which draw water from nearby rivers are finding that the methods they use to purify their drinking water are no longer good enough. Therefore, they are building new water purification plants that use more effective methods to get the water "clean" enough for human use. Explain why the older, simpler methods of water purification no longer work.

ES
02-Core-11A

Mary Beth decided to put potted flowering plants around her kitchen. She bought seeds and planted them. After several weeks, she noticed that fewer seeds germinated in the pots near the sink where they got splashed when she washed the dishes. Those seedlings that did come up looked less healthy than the other plants. What probably is the cause of these differences?

ES
02-Core-12A

Ms. Kelly's students studied the effect of detergent on the germination of seeds. Her students used bean, corn, tomato, and pumpkin seeds. On the basis of your work with radish seeds, select the best prediction below that you can make about the results of Ms. Kelly's students' activities.

a. All of the seeds will have a lower rate of germination, just like my radish seeds.
b. I have no basis for predicting how the detergent will affect other seeds.
c. None of these seeds will show a lower germination rate because detergent affects only radish seeds.
d. I can't predict how the activities will turn out because detergent affects only root crops, such as radishes, beets, turnips, and carrots.
e. I think that the detergent will cause a lower germination rate, but I am not sure because I tested only radish seeds.

ES
02-Core 13A

Many farmers spray their fields with insecticides to try to kill off all the harmful insects. Experiments with some of these insecticides show that they remain in the soil for several years. Describe an activity that you could do to determine whether the insecticide Malathian will affect the germination of squash seeds.

ES
02-Core-14A

Human body wastes are biodegradable. What does *biodegradable* mean?

ES
02-Core-15A

The Lunie Chemical Plant has begun to dump biodegradable chemicals into a nearby lake. A rapid decrease of dissolved oxygen in the lake has been noticed. Describe how the biodegradable chemicals can cause the rapid decrease of dissolved oxygen in the lake.

ES
02-Core-16A

ES
02-Core-17A

The fact that a product is biodegradable is not a guarantee that it will not pollute a stream. Which of the following best states how biodegradable substances can cause pollution?

a. They cannot be broken down into simpler substances by living organisms.
b. They can be broken down into simpler substances by living organisms.
c. They may be a food source for organisms in streams which will, in turn, become overpopulated.
d. They will not be a food source for organisms, thereby decreasing the organisms' population.

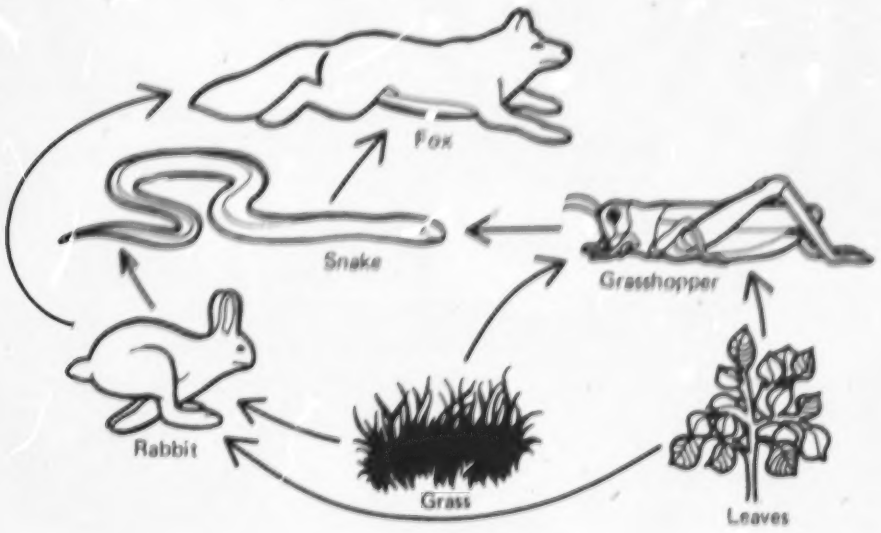
ES
02-Core-18A

Consider the following situation.

Irving Schmitt, a farmer, uses airplanes to dust his crops with nonbiodegradable pesticides. Since he only sprays when there is no breeze, he says that the wildlife in and around a pond down the hill is not affected by his spraying.

1. Is Irv correct?
2. Defend your answer.

ES
02-Core-19A



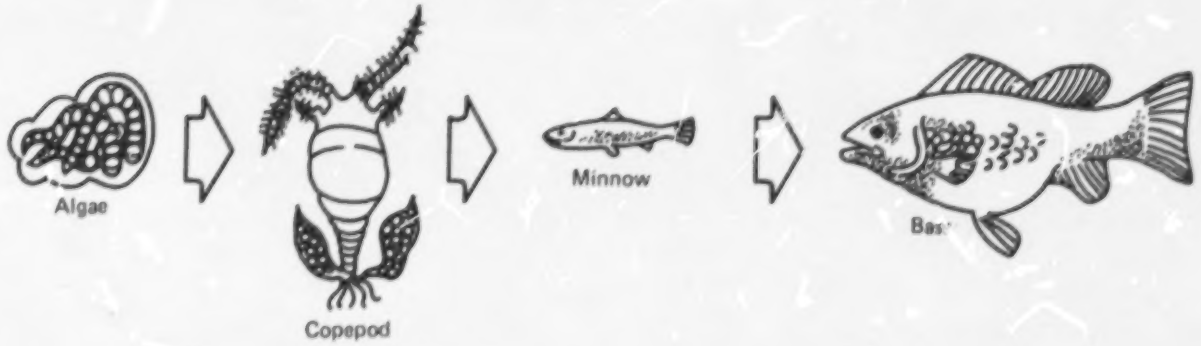
1. State the term used for the system shown above.
2. Explain what the arrow between the rabbit and the fox in the diagram means.

ES
02-Core-20A

The waste that flows from a certain factory into a river contains large quantities of a nonbiodegradable chemical. A chemist tested a sample of water taken from a few miles downstream from the factory. He could find less of this chemical in the river water. State two reasons which account for the disappearance of some of this chemical from the water.

The diagram below shows four organisms in part of the food chain in a freshwater lake that has been polluted with DDE, a nonbiodegradable chemical that accumulates in the body of living organisms. **ES 02-Core-21A**

1. In which type of organism would you expect to find the highest concentration of DDE?
2. In which type of organism would you expect to find the lowest concentration of DDE?



Some widely used detergents can be decomposed by living organisms and are a huge source of food for them. The population of these organisms increases so greatly that their waste products become serious pollutants. Other detergents which are not easily decomposed can accumulate and kill organisms. What would be the characteristics of the ideal detergent? **ES 02-Core-22A**

Take your Record Book to your teacher. Your task is either to defend your written response to Problem Break 4-4 or 4-5 or to make a satisfactory change in any part of it that your teacher questions. **ES 02-Core-23A**

Milk undergoes a chemical reaction during storage. Milk is kept in the refrigerator rather than out in the warm air. Why does storing milk in the refrigerator keep it fresh longer? **ES 02-Core-24A**

Gina measured the body temperatures of three different animals. She then changed the temperature of their surroundings, waited two hours, and measured their body temperatures again. Her data are shown below. **ES 02-Core-25A**

TEMPERATURE OF SURROUNDINGS (in °C)	BODY TEMPERATURE (in °C)		
	Animal 1	Animal 2	Animal 3
29	40	30	29
44	40	43	29

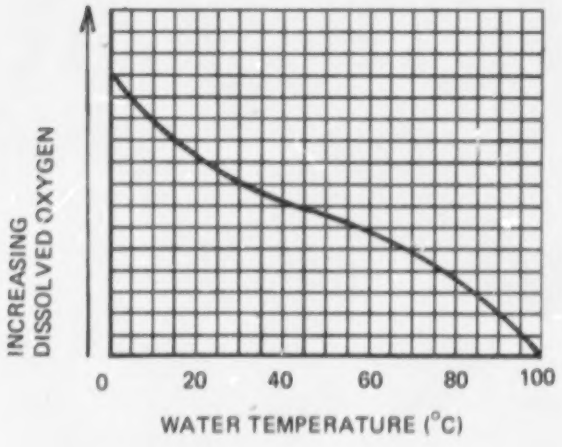
Indicate whether each of the animals is warm-blooded or cold-blooded.

ES 02-Core-26A	In the body of a rattlesnake, chemical reactions occur which release energy to the snake. The rattlesnake is a cold-blooded animal. When the weather gets cold, the activity of rattlesnakes drops, only to increase again when the temperature increases. Use what you have learned to explain why this is so.
ES 02-Core-27A	What is meant by the term *thermal death point*?
ES 02-Core-28A	One hot August day, Mr. Keith decided to set up an aquarium. He purchased some fish. The storekeeper packaged the fish in water in a plastic bag. He assured Mr. Keith that there was enough oxygen in the bag for the fish to live about six hours. On his way home, Mr. Keith stopped at a shopping center. When he came back after about thirty minutes and unlocked his car, he found that all the fish had died. Explain what may have caused the fish to die.
ES 02-Core-29A	Clifton stocked his aquarium with guppies and neon tetras. Both fish have nearly the same preferred temperature range. One morning, he woke up to find that all the neon tetras had died during the night. The thermostat on the aquarium heater had stuck, and by morning the water was quite warm. Explain why one kind of fish died, but the other did not.
ES 02-Core-30A	*There have been many large fish kills because some factories have dumped certain chemicals into a stream or river. Usually only certain kinds of fish die. Explain why only certain kinds of fish die rather than all the fish in the area.*
ES 02-Core-31A	*George went fishing during May. He caught a lot of northern pike by fishing the weed beds in shallow water near the shore. In July he tried the same spots and had no luck there, but he found that pike were being caught in areas where the lake was deepest.* Select the most likely reason below for this. a. So many pike were caught in shallow waters that the rest decided to swim down deeper where it was safer. b. The sun was brighter in July, so the fish swam down to where the light didn't hurt their eyes. c. The surface water had warmed up, so the fish swam deeper until they found water in their preferred temperature range. d. The warmer surface waters were more dense, so the fish swam deeper to find an area where the pressure was less.
ES 02-Core-32A	The grayling is a type of fish that lives only in water which contains large amounts of dissolved oxygen. 1. Would you expect graylings to live in cold water or warm water? 2. Explain the reason for your answer.

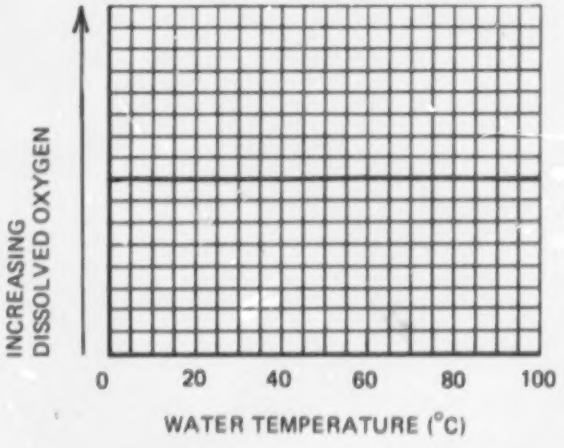
Select the graph below that best shows how the temperature of water affects the amount of oxygen gas that will dissolve in water.

ES
02-Core-33A

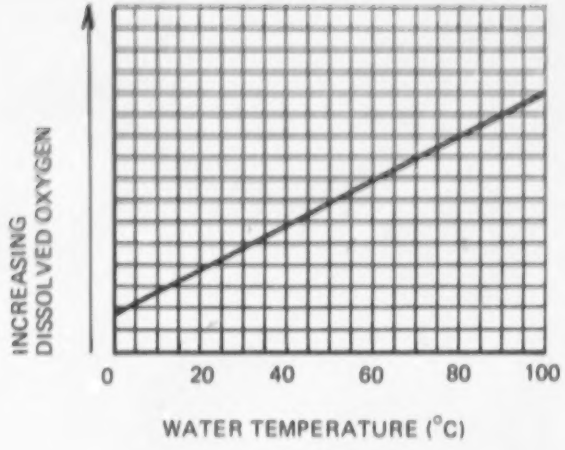
Graph a.



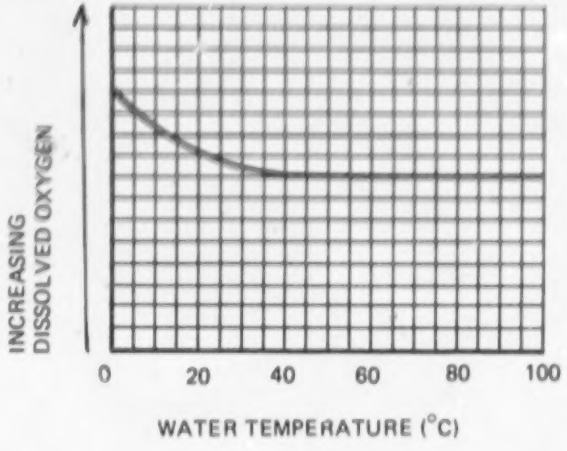
Graph b.



Graph c.



Graph d.



Rick and Laura each keep identical fish tanks in their bedrooms. The only difference between the tanks is that Rick keeps the water in his tank 10° cooler than Laura's. Both bubble air into their tanks.

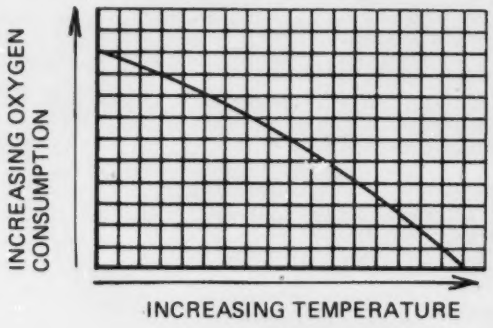
ES
02-Core-34A

1. If an accident were to cut off the supply of air to both of the tanks, would the fish survive longer in the warm or the cool tank?
2. State two reasons for your prediction.

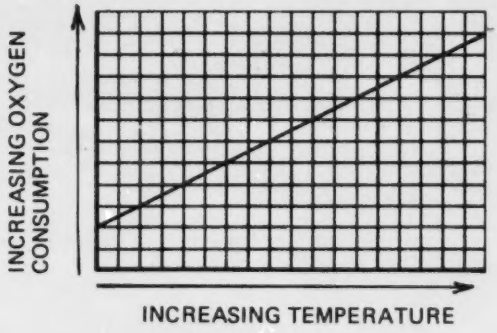
ES
02-Core-35A

Margaret wants to learn how fast sea anemones, which are cold-blooded organisms, use oxygen. She measures their rate of oxygen consumption at different temperatures. Select the graph below that best shows how you would expect the rate of oxygen consumption to relate to temperature.

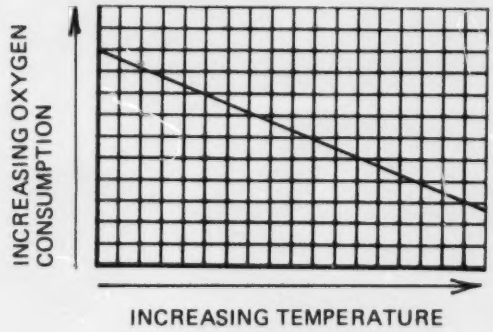
Graph a.



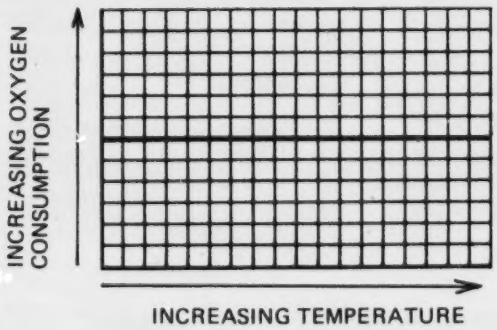
Graph b.



Graph c.



Graph d.



ES
02-Core-36A

What is meant by the term *thermal pollution*?

Which of the following is not a result of thermal pollution? **ES 02-Core-37A**

a. Some fish may be killed because the water temperature is above their thermal death point.
b. The rate at which sewage is decomposed by microbes living in the water is slowed.
c. The amount of oxygen that can be dissolved in the water decreases.
d. Some fish may be driven away because the water temperature is no longer within their preferred temperature range.
e. The biochemical oxygen demand of living organisms increases.

A state agency has agreed to permit local power plants to release water 3°C higher than usual to take care of the increased power needs. Supporters of this measure said that it was perfectly all right because the thermal pollution would be permitted only for the fairly short period of two weeks and no longer. **ES 02-Core-38A**

1. Is this sensible reasoning?
2. Explain your answer.

Parts of Kansas have the same amount of precipitation as parts of Wisconsin. However, the vegetation is not the same in these two areas. In Kansas, the vegetation is mostly grass, but in Wisconsin, the vegetation is mostly trees. List three factors which could explain these differences in vegetation in areas which have the same amount of precipitation **ES 02-Exc 3-1-1A**

In recent years, several disputes have arisen between Canada and the U.S. about water rights in rivers that flow from one country to the other. For example, the U.S. wants Canada to agree to restrict the amount of water that is drawn from the Columbia River so that a certain minimum amount will always flow down the river into the U.S. **ES 02-Exc 3-1-2A**

1. Why weren't there as many arguments about the water flow thirty years ago?
2. Explain why some people think that these disputes about the water flow will continue and become even more serious in the future.

The rate at which trees lose water to the atmosphere is about twenty times greater than grass. Both trees and grass are used to prevent soil erosion. A hilly area surrounding a new housing project is to be planted, but the amount of water in the ground is slightly low. **ES 02-Exc 3-1-3A**

1. As the person in charge of the planting, would you plant trees only, grass only, or some of each?
2. Explain your answer.

ES 02-Exc 3-1-4A	Start with component number 2 below. Arrange the other components by number into the system known as a water cycle to show the order in which they occur. 1. Evaporation 2. Water flowing in a river 3. Precipitation 4. Water runoff in a drainage ditch
ES 02-Exc 4-1-1A	Vivian is doing some experiments on the growth of plants. She needs to define *plant growth* operationally. Give two operational definitions for *plant growth*. In other words, state two ways to detect and to measure the growth of Vivian's plants.
ES 02-Exc 4-1-2A	Most towns treat their drinking water with chemicals which contain chlorine and fluorine. Rainwater usually does not contain these chemicals. Describe an experiment that you could do to discover whether rainwater and tap water have different effects on the rate of germination and the growth of the seeds which germinate. Be sure to state which variables should be held constant and which should vary.

Dennis Oliver is quite proud of the fact that he doesn't contribute to the air pollution problem. He lives in a house that is completely powered by electricity. He has sold his car and now travels to and from work, using the city's electrically-powered rapid transit system.

ES
03-Core-1A

1. Is Dennis correct in assuming that he doesn't contribute to the air pollution problem?
2. Explain your answer.

A certain factory in Millsville has always been considered a major source of air pollution because of the black soot from its smokestack. Recently a filtering system was installed that collects the solid particles as they travel up the smokestack. Now the sky above the stack is always clear.

ES
03-Core-2A

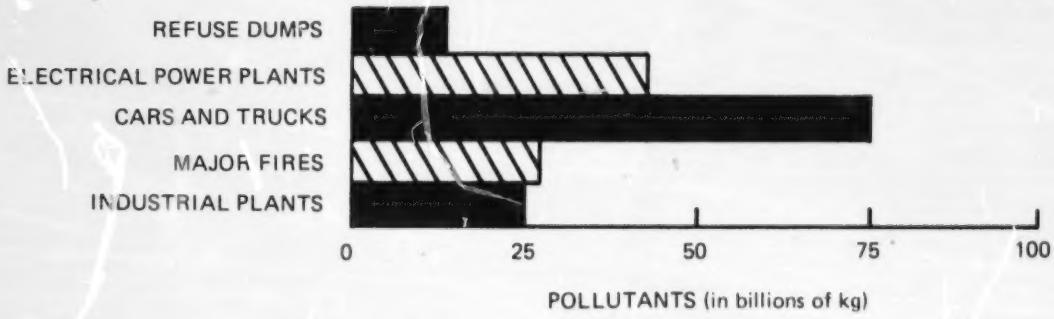
1. Does this factory no longer contribute to air pollution?
2. Explain your answer.

In Chapter 6, you used a piece of sticky tape to study solid-particle air pollution. Write an operational definition for *solid-particle air pollution,* using the sticky-tape method.

ES
03-Core-3A

Consider the size of refuse dumps, electrical power plants, cars and trucks, major fires, and industrial plants. How do you expect the fact that cars and trucks, which individually are so small, produce the greatest amount of pollution as shown below?

ES
03-Core-4A



The substances listed below are products of combustion. Which one is not considered to be a major pollutant?

ES
03-Core-5A

a. Nitrogen oxides
b. Sulfur oxides
c. Solid particles
d. Unburned hydrocarbons
e. Carbon dioxide

ES
03-Core-6A

Select the answer that best describes the possible effects of air pollution.

a. Kills or weakens animals
b. Causes rubber and nylon to deteriorate
c. Causes damage to crops
d. Increases the rate at which stone breaks down
e. All of these

ES
03-Core-7A

Sheila: Forcing industry to remove pollutants from the output of factories means that factories have to buy expensive equipment.

Kitty: Yes, but not removing the pollutants is expensive to lots of other people.

Sheila: What? How can not spending money to remove pollutants cost money?

On your answer sheet, write a good response for Kitty to make. Include at least two examples of how releasing pollutants is expensive.

ES
03-Core-8A

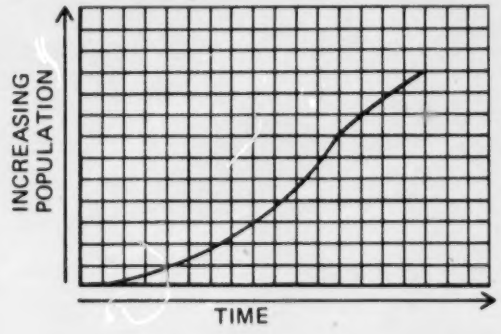
Mr. Singer is quite concerned about the effect of the increasing air pollution in the city where he lives. He plans to move to a farm to escape all the air pollution.

1. Will he escape air pollution by moving to the country?
2. Explain your answer.

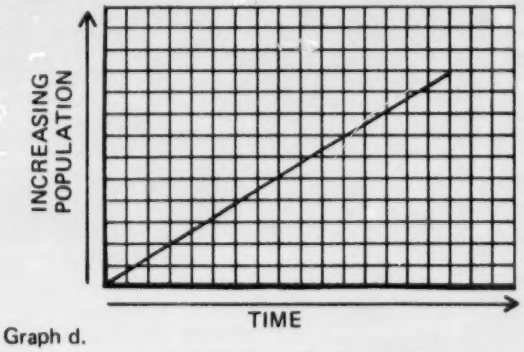
ES
03-Core-9A

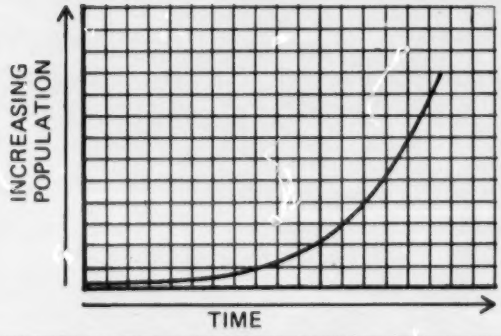
Which of the following graphs shows the greatest population explosion?

Graph a.

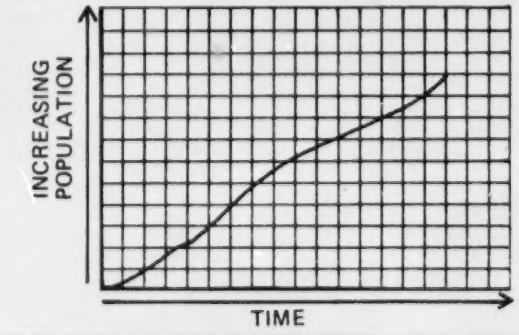


Graph b.





Graph d.



ES
03-Core-10A

Ron raises hamsters in the garage. Over the years, his hamster population has grown considerably. His mother has laid down the law! If his hamster population gets any larger, she will make him get rid of all his hamsters.

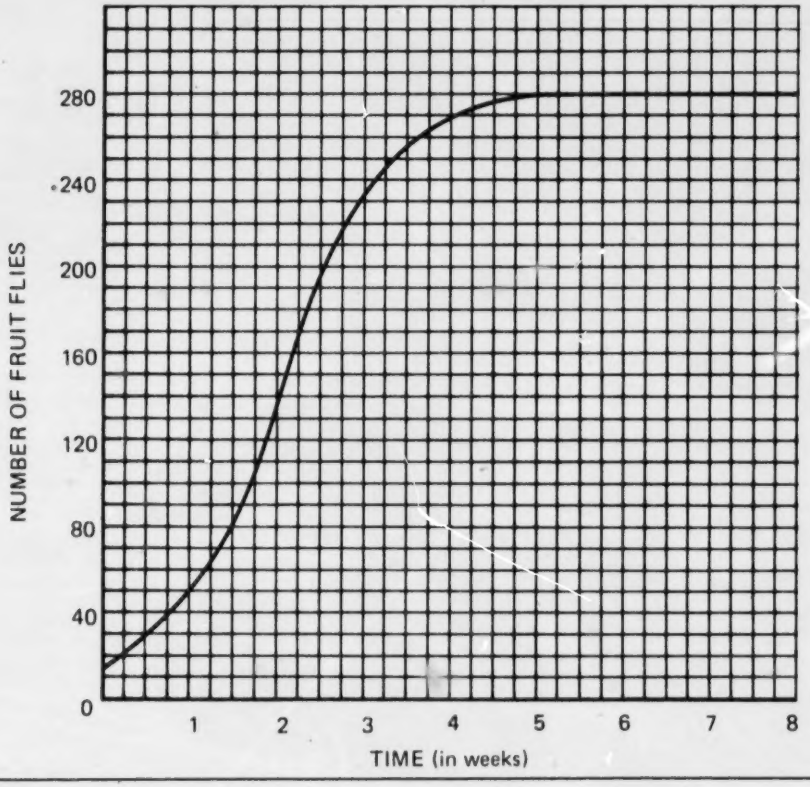
By answering the questions below, show how births must be related to deaths to keep the population constant. Assume that no hamsters are sold, are given away, or escape.

1. How many deaths must there be in 1975 to result in a constant population?
2. How many births can there be in 1976 to result in a constant population?

YEAR	1972	1973	1974	1975	1976
Population at end of year	52	102	169	169	169
Births	46	85	120	130	?
Deaths	2	35	53	?	50

ES
03-Core-11A

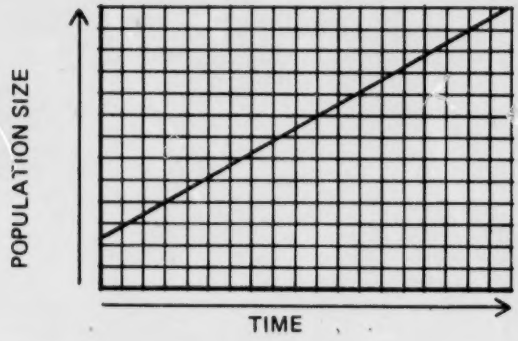
Roger kept a culture of fruit flies for several months. He added the same amount of food each day. Every week he counted the number of live flies. Then he drew the graph shown below. At what point in time is the number of deaths in the population equal to the number of births?



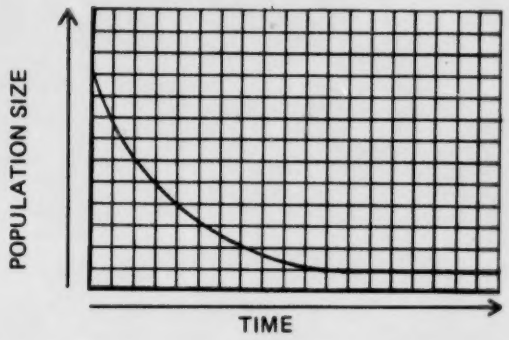
ES 03-Core-12A

Which graph below best indicates how populations of plants and animals usually change with time?

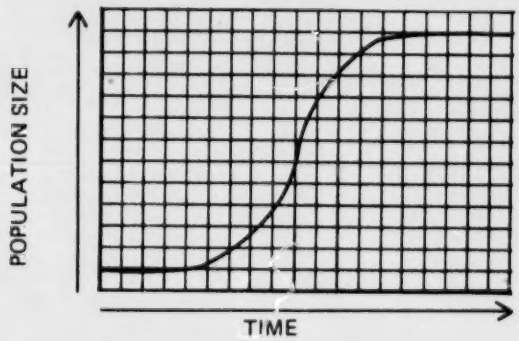
Graph a.



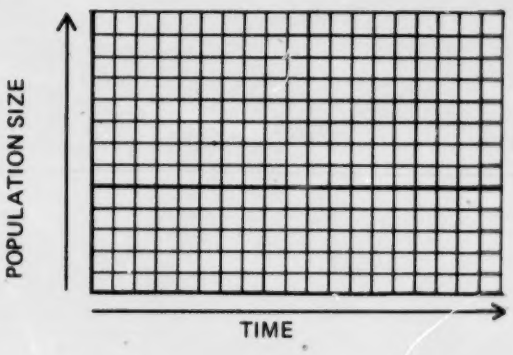
Graph b.



Graph c.



Graph d.



ES 03-Core-13A

What are four variables that could limit the size of a nonhuman population?

ES 03-Core-14A

The number of people on the earth increased very slowly until about 1700. What variables, if any, has man learned to control or change that have allowed the human population to increase so rapidly since 1700?

ES 03-Core-15A

Take your *Record Book* to your teacher. Your task is either to defend your written response to Problem Break 8-1 or Problem Break 8-3 or to make a satisfactory change in any part of it that your teacher questions.

ES 03-Core-16A

Take your *Record Book* to your teacher. Your task is either to defend your written response to Problem Break 8-2 or to make a satisfactory change in any part of it that your teacher questions.

Consider the following information about the world's population.

ES
03-Core-17A

Present world human population = 3,800,000,000
Birthrate = 316,000 per day
Death rate = 139,000 per day

Assuming that the birthrate and the death rate stay constant, how many days will it take for the world's population to reach 3,801,000,000? Show your calculations.

ES
03-Core-18A

Birthrate (per day)	311,000 (high)
Death rate (per day)	138,200 (low)

The current world birthrate and death rate are shown above. This situtaion must change if the population is to stop increasing. Shown below are two possible conditions which would result in a constant population.

	CONDITION I	CONDITION II
Birthrate (per day)	311,000 (high)	138,200
Death rate (per day)	311,000	138,200 (low)

1. Which would be more desirable – Condition I, which has an increased death rate, or Condition II, which has a decreased birthrate?
2. Explain the reasons for your answer.

State how a temperature inversion is related to an increase in the air pollution at the earth's surface.

ES
03-Exc 6-1-1A

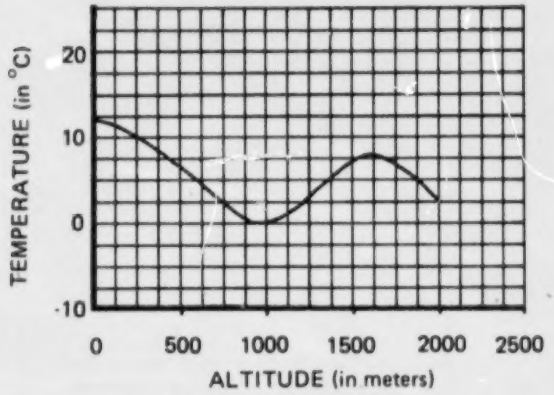
What is a major cause of a temperature inversion?

ES
03-Exc 6-1-2A

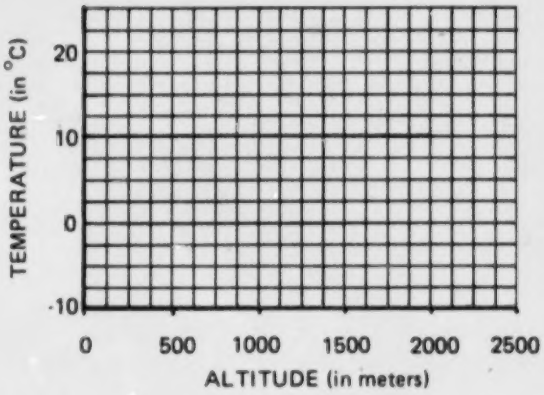
ES
03-Exc 6-1-3A

1. Which graph below shows the normal way temperature changes as altitude increases?
2. Which graph below shows the way the temperature changes with altitude during a temperature inversion?

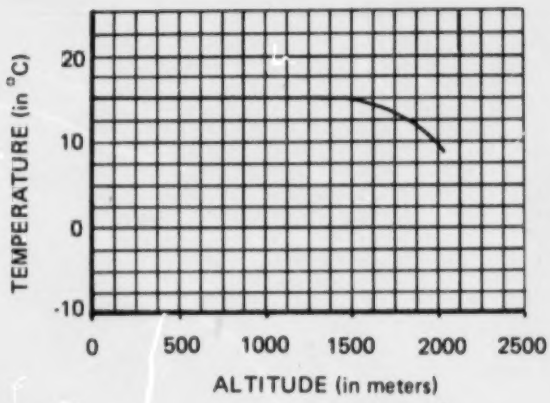
Graph a.



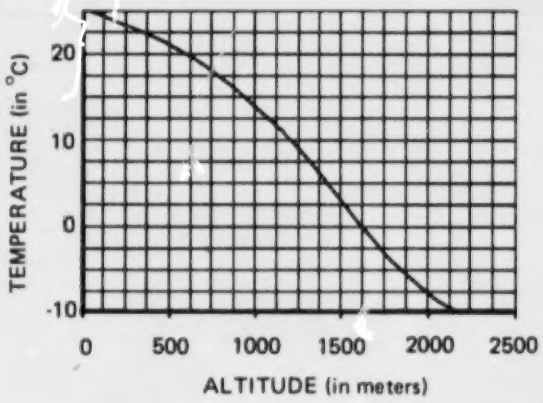
Graph b.



Graph c.



Graph d.



ES
03-Exc 7-1-1A

Which of the following variables directly influence the size of the population in any country?

a. The birthrate
b. The death rate
c. The number of cars
d. The number of redheads
e. The number of storks

Tina was doing a population study of spiders. She used three different sets of experimental conditions, as shown below.

ES
03-Exc 7-1-2A

EXPERIMENTAL CONDITION	FOOD SUPPLY	EMIGRATION
I	limited	not allowed
II	unlimited	not allowed
III	limited	allowed

Four possible experimental results for each of these experiments are shown below.

EXPERIMENTAL RESULT	BIRTHRATE vs DEATH RATE
a	lower birthrate and equally low death rate
b	lower birthrate and a higher death rate
c	higher birthrate than death rate
d	a high birthrate which is equalled by the death rate

1. Based on the results of Dr. Emlen's experiments with mice, which of the experimental results (a, b, c, or d) shown above would you predict Tina will get for experiment I?
2. For experiment II?
3. For experiment III?

Suppose that the following two new planets have been discovered.

ES
03-Exc 7-2-1A

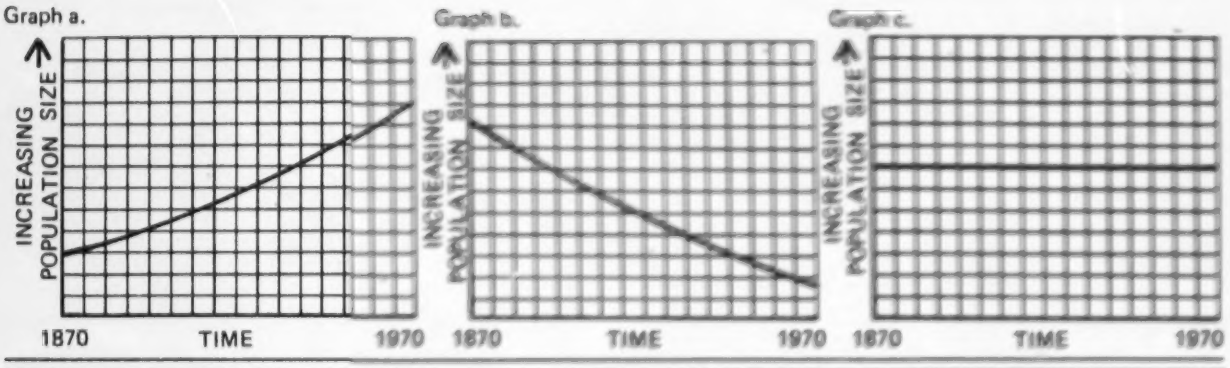
PLANET	TEMPERATURE RANGE (in°C)	ATMOSPHERIC COMPOSITION
Farout	-5 to 65	nitrogen and carbon dioxide
Outasite	-90 to -15	oxygen and nitrogen

1. Would either of these planets be suitable for human habitation without support equipment?
2. Explain the reasons for your answer.

ES
03-Exc 7-3-1A

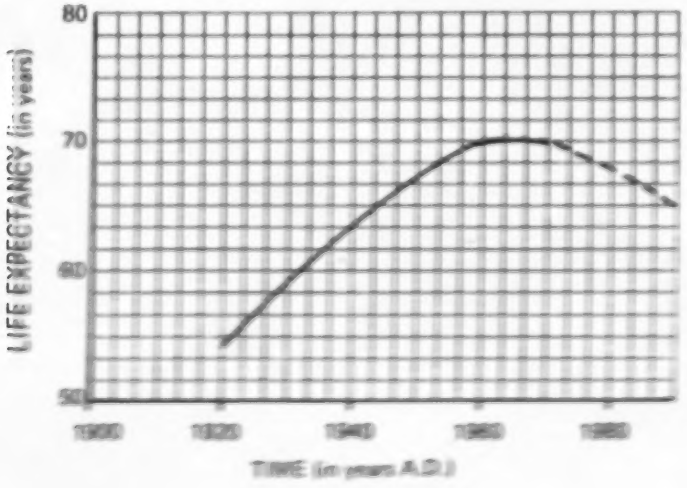
Each of the graphs below was drawn for the population of a different country. Match the appropriate graph to the approximate average family size in that country. Assume that no change in the life span of the individual occurred between 1870 and 1970.

Family Size	Population Curve
1. The average family had fewer than two children.	
2. The average family had exactly two children.	
3. The average family had more than two children.	



ES
03-Exc 7-3-2A

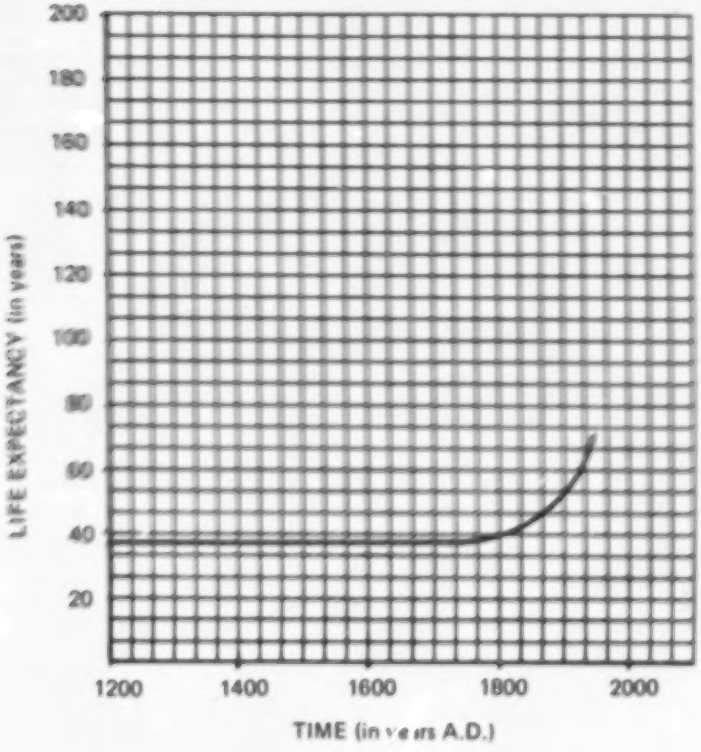
The solid line on the graph below shows how human life expectancy has changed in the U.S. since 1920. The dotted line shows one prediction of how it will change during the next twenty years.



What could cause a decline in life expectancy during the next twenty years?

The graph below shows how life expectancy has changed since 1200 A.D.

ES
03-Exc 7-3-3A



1. Use this graph to predict the life expectancy in 2100 A.D.
2. Explain why your prediction is likely to be inaccurate.

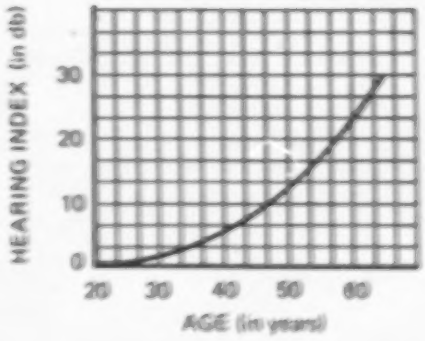
Roy listens to the car radio every morning on his way to work at the carpentry shop. He leaves the radio switched on, and it comes on when he starts the car. Therefore, the volume is the same when he starts the car to go home after work as it was in the morning. He has noticed, however, that to hear the radio he has to turn the volume up after work and then turn it down again the next morning because it sounds too loud. Explain what might be causing this daily change in Roy's hearing.

ES
03-Exc 8-1-1A

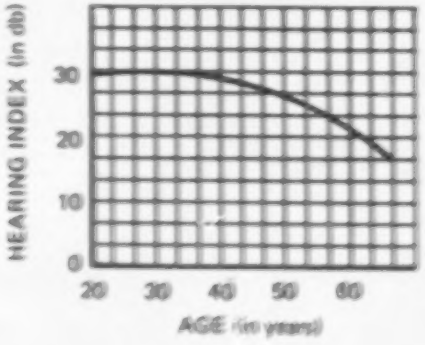
ES
03-Exc 8-1-2A

Ralph wanted to measure how people's hearing changed with age. He measured the hearing index of a number of people. He operationally defined *hearing index* as the decibel level of the quietest sound that the person could hear. Which of the graphs below shows how the hearing index, as Ralph defined it, usually changes with age?

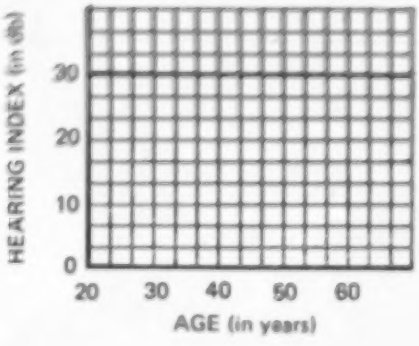
Graph a.



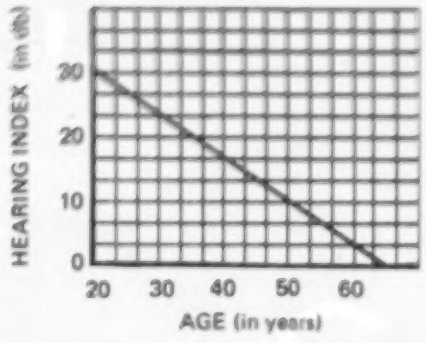
Graph b.



Graph c.



Graph d.



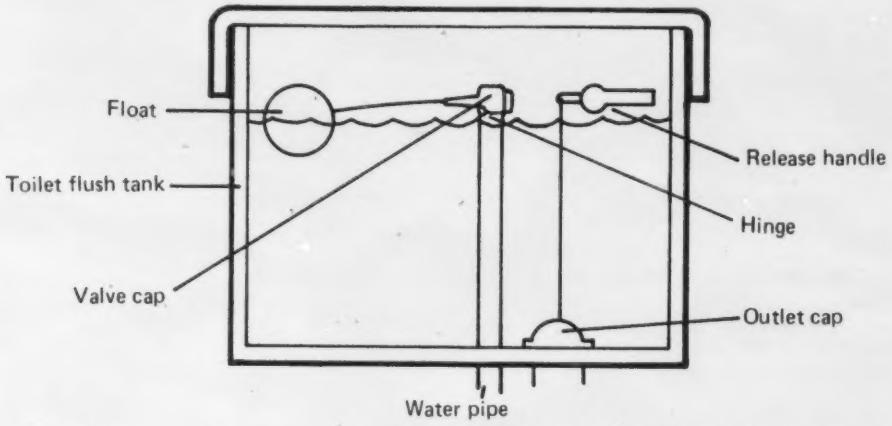
Well-Being **WB**

A thermostat together with a furnace is referred to as a system. What is meant by the term *system*?

WB
01-Core-1A

The toilet flush tank diagramed below can be thought of as a system.

WB
01-Core-2A

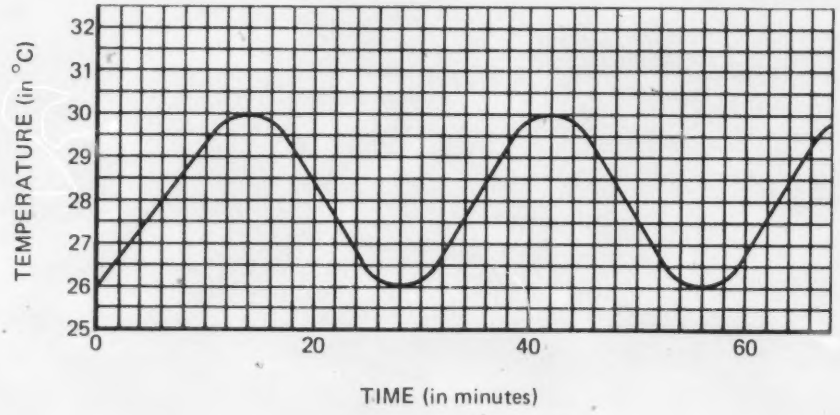


When the release handle is pushed, the water rushes out of the flush tank. The float drops down, raising the valve cap and allowing water to flow up into the flush tank. The float rises, lowering the cap, until the cap stops the inflow of water completely.

1. Identify the stimuli and responses that make this a negative feedback system.
2. Explain why this is an example of a negative feedback system.

Louis measured the temperature inside an incubator used to keep eggs warm before they hatch. He plotted the temperatures recorded in the incubator on the grid shown below.

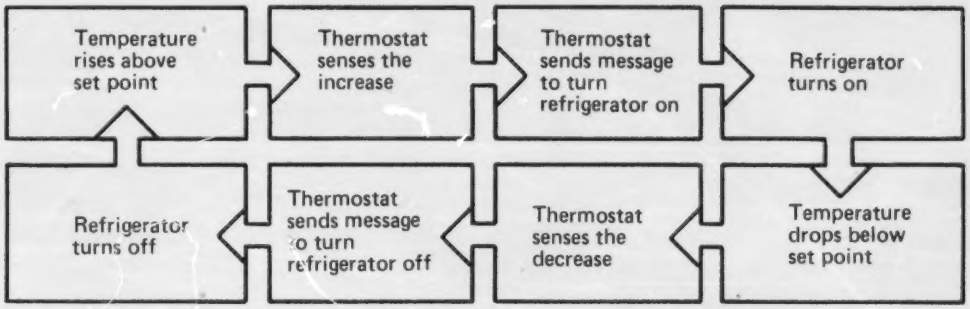
WB
01-Core-3A



At what temperature (set point) is the thermostat set to control the temperature of the incubator?

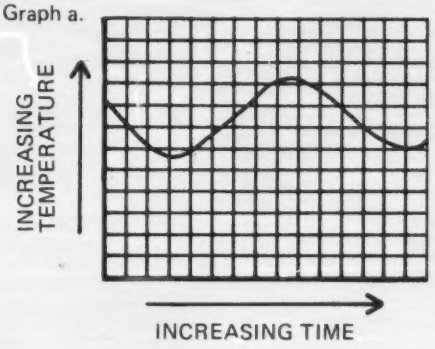
WB
01-Core-4A

The thermostat is used to regulate the temperature inside a refrigerator. The diagram below shows how the refrigerator-thermostat system works.

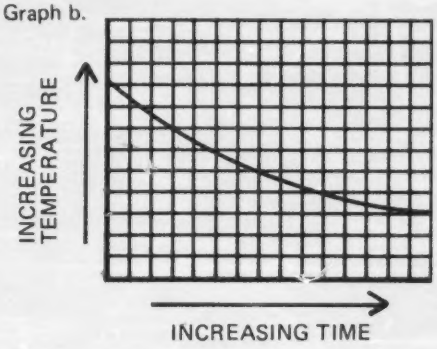

Temperature rises above set point
Thermostat senses the increase
Thermostat sends message to turn refrigerator on
Refrigerator turns on
Temperature drops below set point
Thermostat senses the decrease
Thermostat sends message to turn refrigerator off
Refrigerator turns off

Write the letter of the graph that best shows how the temperature changes inside a closed refrigerator.

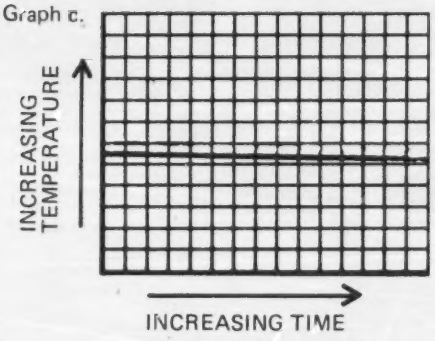
Graph a.



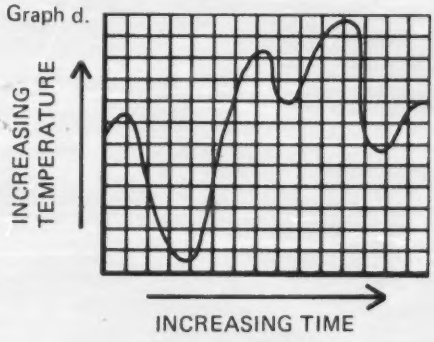
Graph b.



Graph c.



Graph d.



WB
01-Core-5A

Suppose that in January the thermostat that helps control the temperature in your classroom gets broken.

1. Predict one thing that might happen to the room temperature if this occurred.
2. Explain why it would happen.

The formula used to calculate the amount of heat needed to change the temperature of water is

WB
01-Core-6A

calories = mass of water (g) X change in temperature (°C).

How many calories of heat are required to raise the temperature of 650 grams of water from 22°C to 38°C?

Give an operational definition of *calorie.*

WB
01-Core-7A

How many calories equal 1 Calorie?

WB
01-Core-8A

Select the statement that best indicates what happens in the body to the energy in food which has been eaten.

WB
01-Core-9A

a. All of the energy is used to keep the body at a constant temperature.
b. Some of the energy is used to keep the body warm, and the rest is used to do work.
c. The energy is used to keep the body temperature constant and to do work; any that is left over is stored as fat.
d. Most of the energy is used in doing work; the rest is used to keep the body at the correct temperature.
e. The energy is either used to do work or stored as fat that can be used as an energy source between meals.

Liz wants to lose some weight without taking drugs. What are two different ways she can do this?

WB
01-Core-10A

Susan wants to lose five pounds. She has adjusted her diet so that her food energy input is 1,600 Calories per day. Her body requires 2,100 Calories each day for doing work and for temperature control. How long will it take her to lose five pounds? Show all your work. (Note: A pound of body fat represents about 3,500 Calories of stored energy.)

WB
01-Core-11A

Good diet plans suggest that a person who is trying to lose weight should eat a variety of different foods. The diet usually includes leafy vegetables, meats, yellow vegetables, and fruit. Why do good diet plans stress eating many different kinds of food, as well as decreasing the total food intake?

WB
01-Core-12A

Your teacher will observe you for this check when he can.

WB
01-Core-13A

WB 01-Core-14A	Your teacher will observe you for this check when he can.
WB 01-Core-15A	Your teacher will observe you for this check when he can.
WB 01-Core-16A	Your teacher will observe you for this check when he can.
WB 01-Core-17A	Your teacher will observe you for this check when he can.
WB 01-Exc 1-1-1A	Which of the following is used to measure units of heat energy? a. degree b. milliliter c. newton d. calorie e. temperature
WB 01-Exc 1-1-2A	In Excursion 1-1, you found that a single burning peanut gave off more heat than five burning marshmallows. Select the best possible conclusion that you could draw from this activity. a. All foods give off the same amount of heat energy when they are burned. b. All foods contain different amounts of heat energy. c. I cannot predict whether all foods give off different amounts of heat energy when burned because I tested only marshmallows and peanuts. d. Other foods probably give off differing amounts of heat energy when burned, but I cannot be sure because I tested only peanuts and marshmallows.
WB 01-Exc 1-1-3A	Oscar performed an activity and found that three burning marshmallows released 2,760 calories. How many Calories is this?
WB 01-Exc 1-2-1A	Suppose you were trying to reduce the number of Calories you consumed. Which one of the following foods would you most want to avoid? a. Corn, which is mostly starch b. Roasted peanuts, which contain a lot of fats and oils c. Fish, which is rich in proteins

1. Potatoes may be prepared several ways. Which method of preparation gives you the largest number of Calories?

WB
01-Exc 1-2-2A

   a. Mashed potatoes
   b. French-fried potatoes
   c. Baked potatoes
   d. No difference

2. Explain your answer.

Dr. Cartney told a health class that it is very important to have a well-balanced diet.

WB
01-Exc 1-2-3A

1. Did he mean only that a person should count the Calories in the food he eats?
2. Explain your answer.

Michael has kept track of the amount of time he spent doing various activities. Part of his activity chart is shown below. What is the total number of Calories he used doing those activities? Show your work.

WB
01-Exc 1-3-1A

ACTIVITY	TIME (in hours)	CALORIES USED (per pound of body weight per hour)	BODY WEIGHT (in pounds)
Bicycling (slowly)	1	1.1	140
Eating	1	0.2	140

When you investigated the effect of the cigarette-smoke solution on the germination of corn seeds, you were asked to set up a control. Why are controls necessary in such activities?

WB
02-Core-1A

List three different chemicals or types of chemicals that are found in cigarette smoke.

WB
02-Core-2A

The diagrams below show the epithelial tissue from the windpipes of three different people. One person is a heavy smoker, one smokes a moderate amount, and one is a nonsmoker. Match the letters of the proper diagrams below with the numbers of the labels.

WB
02-Core-3A

Types of Smokers

1. Nonsmoker
2. Heavy smoker
3. Moderate smoker

Diagrams of Tissue

Diagram a.

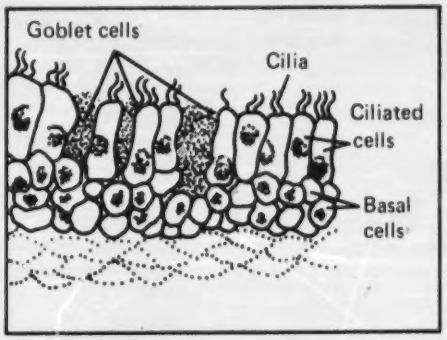


Diagram b.

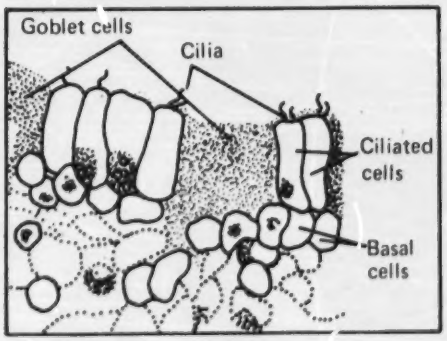
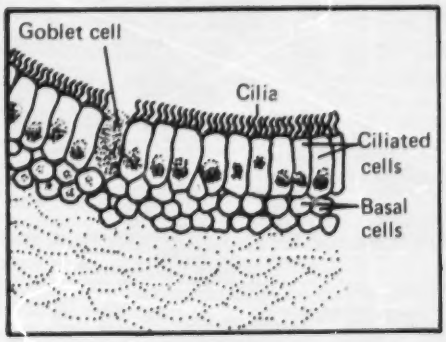


Diagram c.



WB
02-Core-4A

Which of the following is not an effect that smoking has on the body?

a. It reduces the number and activity of the cilia in the epithelium of the windpipe.
b. It increases the mucus and the chances of having a cough or other respiratory problems.
c. It reduces the breathing rate.
d. It tends to break down the walls of the air sacs in the lungs.
e. It increases the heartbeat rate.

WB
02-Core-5A

Throughout the late fall and early winter, John counted the number of people who wore scarves to school and the number of people who had colds. He found that as the number of people wearing scarves increased, the number of people with colds also increased.

1. Do these data prove that wearing a scarf increases the chances of catching a cold?
2. Explain your answer.

WB
02-Core-6A

The following statements refer to the death rate among people who smoke. Indicate which of these statements is not correct.

a. People who smoke are more likely to die of lung cancer than nonsmokers.
b. Smokers who inhale deeply have a higher death rate than people who smoke but do not inhale.
c. The death rate for people who stop smoking is just as high as the death rate for those who keep smoking.
d. The death rate for people who smoke fewer cigarettes a day is lower than the rate for those who smoke many.

WB
02-Core-7A

Some people are said to have a physical dependence on tobacco. Give an operational definition for *physical dependence*.

WB
02-Core-8A

State an operational definition for *psychological dependence*.

WB
02-Core-9A

In each of the following situations

(a) indicate whether the person described is physically or psychologically dependent on the drug and
(b) explain your answer.

Situation 1. Ruth tried a new brand of cough syrup last year when she had a severe cold. She told friends, "It makes me feel great." Now, she almost looks forward to catching a cold so that she has an excuse for taking some more of that cough syrup.

Situation 2. Barbara had problems with a runny nose. She found that a nasal spray helped. She used it for four months. Then, she found that if she didn't spray her nose, it would run worse than ever.

Mrs. Jones is pregnant. Her doctor advised her to stop using antibiotics to control a rash on her face until after the baby is born. Explain why the doctor is concerned about the drugs Mrs. Jones takes while she is pregnant.

WB
02-Core-10A

Ronald took a drug that seemed to affect his sense of balance. He could not stand up straight, but would lose his balance and fall. Diagram and label a possible negative feedback system that might no longer be working because of this drug.

WB
02-Core-11A

What are two different ways that messages are sent in the human body?

WB
02-Core-12A

Many people are becoming concerned about increasing drug abuse. Explain the difference between drug use and drug abuse.

WB
02-Core-13A

Many plants and animals are made up of the parts listed below. Arrange these parts in order from the simplest to the most complex.

1. Organ
2. Cell
3. Organ system
4. Tissue

WB
02-Exc 2-1-1A

Why is it necessary for most plants and animals to be composed of many different kinds of cells instead of just one kind of cell?

WB
02-Exc 2-1-2A

List three advantages of interviews over written questionnaires.

WB
02-Exc 2-2-1A

The companies that take surveys of public opinion usually spend a great deal of money training their interviewers. In each series of interviews, the interviewers are expected to ask exactly the same questions, using exactly the same tone of voice. Why is this training important?

WB
02-Exc 2-2-2A

Many surveys use written questionnaires rather than personal interviews, despite the advantages of an interview. What are several advantages of using a written questionnaire?

WB
02-Exc 2-2-3A

WB
02-Exc 2-2-4A

Arthur wanted to do a survey to determine student attitudes toward drinking alcohol. The first part of his questionnaire is shown below.

SURVEY OF STUDENT ATTITUDES TOWARDS ALCOHOL

1 What is your name?

2. What is your age?
   [ ] 10-15 years old
   [ ] 18-21 years old
   [ ] 21 years old or older

3. You don't drink alcohol, do you?
   [ ] yes
   [ ] no

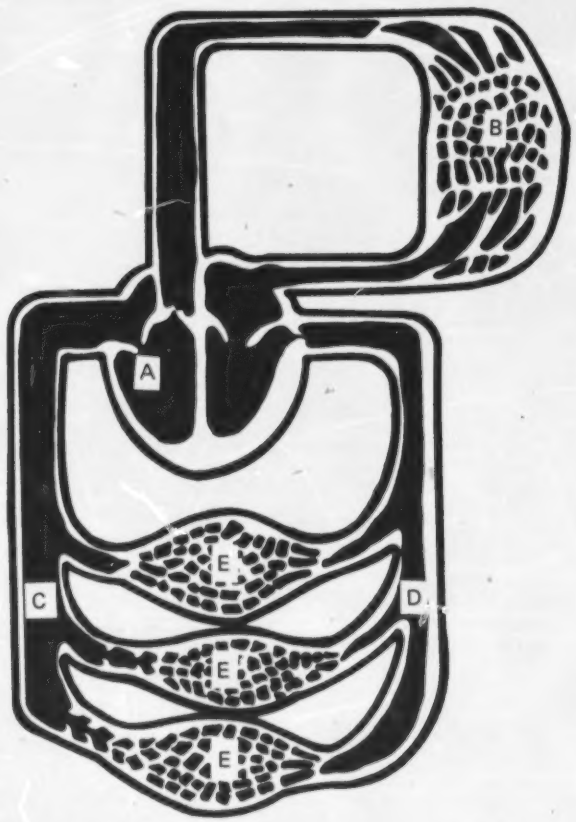
4. Do you think that people who drink are very bad?
   [ ] yes
   [ ] no

Improve this questionnaire by rewriting it and making at least three changes.

WB
02-Exc 2-3-1A

The diagram below represents the human circulatory system.

1. Name the organs indicated by letters A and B.
2. Name the kinds of blood vessels indicated by letters C, D, and E.



The diagram below represents the human circulatory system. Indicate the path that blood flows through the body by listing, in order, the letters that correspond to the various parts. Start and finish with the part labeled M.

WB
02-Exc 2-3-2A

State two things that the red blood cells do which make them important to the functioning of the body.

WB
02-Exc 2-3-3A

Some people take drugs that are depressants. Define *depressant.*

WB
03-Core-1A

Suppose a person has taken a depressant. List two effects of the drug that you might notice in the person.

WB
03-Core-2A

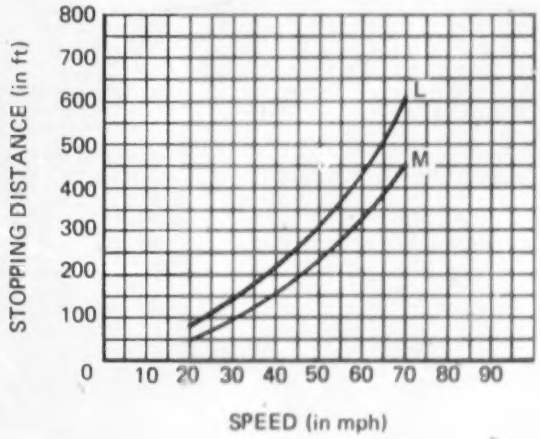
Physicians often use depressants to treat people who are sick. Select the helpful effects of depressants which might cause a physician to prescribe them.

WB
03-Core-3A

a. To prevent epileptic seizures
b. To relieve the pain from cancer
c. To help a person react faster
d. To increase alertness
e. To reduce the tendency to cough

The graph below shows the distance required to stop a car at different speeds. One line shows the stopping distances for a normal driver. The other line shows the stopping distances for the same driver after he has been drinking.

WB
03-Core-4A



1. Which curve represents the stopping distances after the driver has been drinking?
2. Explain why the driver has different stopping-distance curves before and after drinking.

Most police departments use a blood-alcohol level test. It tells whether a driver who has been drinking should be charged with drunken driving. Some people have suggested that testing the drinking driver's reaction time would be a better test.

WB
03-Core-5A

1. Why is the blood-alcohol test not always fair?
2. Why might testing a driver's reaction time be fairer?

WB
03-Core-6A

Three different people, all about the same size, took the drugs listed below.

Person 1	2 oz whiskey
Person 2	2 sleeping pills
Person 3	1 oz whiskey and 1 sleeping pill

1. Which person is likely to be affected most by these drugs?
2. Explain the reason for your answer.

WB
03-Core-7A

Indicate which of the items in the list below are useful properties of a stimulant prescribed by a doctor.

a. Relaxes people who tend to be nervous
b. Relieves severe pain
c. Reduces the appetite
d. Helps people get to sleep and have a good rest
e. Helps cure an upset stomach

WB
03-Core-8A

Stimulants can cause physical and psychological changes in a person who uses them. Record the letters of any of the following which can be effects of stimulants.

a. Nervousness
b. Physical dependence on the drug
c. Flashbacks – experiencing the effects of the drug at a later time when the user has not taken the drug recently
d. Loss of appetite
e. Increased heartbeat rate

WB
03-Core-9A

Mr. Harrison is a long-distance truck driver. He says he takes pep pills, which are stimulants, when he is on a long haul because they eliminate the need for sleep caused by driving long hours.

1. Are pep pills really an effective substitute for sleep?
2. Explain your answer.

WB
03-Core-10A

What is meant when a person is said to be developing a tolerance to a drug?

WB
03-Core-11A

Match each drug with its possible source.

Hallucinogenic Drugs	Possible Sources
1. LSD	a. Fungus (mold) on grains
2. Marijuana	b. Hemp plant
3. Mescaline	c. Mushrooms
4. Psilocybin	d. Peyote cactus
	e. None of these

A scientist is interested in measuring the effects of marijuana on a person's driving ability. Below is his operational definition of *driving ability*.

A person's driving ability is detected and measured by his score on the written test of the rules of the road. The higher his score, the greater his driving ability is.

1. Is this a good operational definition of *driving ability*?
2. Explain your answer.

WB
03-Core-12A

Suppose that two people took exactly the same amount of a hallucinogenic drug.

1. Would you expect them both to experience the same psychological effects?
2. Explain the reason for your answer.

WB
03-Core-13A

Suppose a good friend of yours has some LSD that he wants to try. He knows that you have been discussing the effects of hallucinogens in your science class. "What undesirable or unpleasant things could this LSD do to me?" he asks you.

List at least four different things you could tell him.

WB
03-Core-14A

Don says that all this talk about LSD, a hallucinogen, causing bad effects is just meant to scare people. He says that he has taken LSD ten times in the last year and has had no bad effects.

1. Does Don's experience prove that hallucinogens do not produce any bad effects?
2. State two reasons which support your answer.

WB
03-Core-15A

What is a placebo?

WB
03-Core-16A

When scientists test the effectiveness of a drug, they give some people placebos and some people the drug they are testing. Explain why they do this.

WB
03-Core-17A

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1. Explain what is meant by *double-blind experiment*.
2. Explain why double-blind experiments are used.

WB
03-Core-18A

Jim wants to find out whether coffee that contains caffeine tends to keep people awake at night. To investigate this, he is giving his brother Tom and his sister Susan each a cup of coffee to drink every evening before they go to bed. Sometimes they get regular coffee and sometimes they get decaffeinated coffee. Tom and Susan never know which kind they are getting. Jim is keeping track of when they get the regular coffee and when they get the decaffeinated coffee and of how well they sleep.

1. Is Jim's experiment a double-blind experiment?
2. Explain your answer.

WB
03-Core-19A

WB **03-Core-20A**	Your text suggests that there are two kinds of reasons why laws are passed. State the text's reason that each of the following laws was passed. 1. There shall be no shooting of guns within the city limits. 2. There shall be no gambling by persons under the age of 18.
WB **03-Core-21A**	In Chapter 6, you read that laws are passed for two reasons. One reason is to protect people from other people. The other reason is to support certain moral standards. 1. Does the following law fit one of the above categories? "Everyone buying things in Erie County must pay a 4% sales tax." 2. If it does, explain how. If it doesn't, explain the reason that such a law might be passed.
WB **03-Exc 5-1-1A**	For each of the following, indicate whether it is an illusion (I), a delusion (D), or a hallucination (H). 1. While driving across a desert, a person sees water on the road in the distance. 2. A person believes that the whole world is designed for his benefit. 3. A driver stopped at a traffic light feels that his car is rolling backwards when he notices the car next to him moving ahead. 4. A person on an LSD trip says he tastes the music. 5. A person believes that if he wears anything yellow, he will have bad luck.
WB **03-Exc 5-2-1A**	The DSST was used with new and regular users of marijuana. The test could be thought of as an operational definition of *reaction time*. Explain why the DSST is an operational definition of *reaction time*.
WB **03-Exc 5-3-1A**	Larry and Kathy were walking home from a movie one evening. They passed one house in which a very loud and noisy party was going on. Larry said that it sounded like a pot party. Kathy thought it sounded more like a drinking party. 1. Were the people at the party more likely to have been smoking marijuana or drinking alcohol? 2. Explain your answer.